

REMARKS

Claims 1-12 are all the claims pending in the application. Previously, claims 13-17 were canceled without prejudice or disclaimer. Reconsideration and allowance of all the claims are respectfully requested in view of the following remarks.

Request for Telephone Interview

The undersigned respectfully requests that the Examiner call 202-663-7420 to set up a telephone interview to discuss this response.

Claim Rejections - 35 U.S.C. § 103

- *The Examiner rejected claims 1, 2, 4, 6, 7, and 10-12, under §103(a) as being unpatentable over US Patent 6,524,009 to Kurimura et al. (hereinafter Kurimura) in view of JP 2000-46061 (hereinafter JP '061).*

Applicants respectfully traverse this rejection because: (1) the Examiner's interpretation of Kurimura is mistaken; and (2) one of ordinary skill in the art would not have combined the references as suggested by the Examiner.

(1) First, the Examiner's interpretation of Kurimura is mistaken for at least the following three reasons.

(i) The Examiner asserts that Kurimura discloses that "at least a first one of the inner ring race, the outer ring race and the rolling surface comprises a first portion with a formed film made of a material ... and wherein at least a second one of the inner ring race, the outer ring race and the rolling surface comprises a second portion on which there is disposed no formed film ..." Office Action at page 3, second paragraph, lines 6-10. However, the formed film that the Examiner relies on is a lubricating film such as an oil or grease film. Kurimura at: abstract, lines 5-6; sentence bridging col. 1 and 2; and col. 3, lines 60-67. One of ordinary skill in the art would readily understand that such a lubricating film would be applied to each one of the inner ring race, the outer ring race, and the rolling surface. That is, the nature of grease and oil lubricants is such that upon first application, and during running of the bearing, they are dispersed throughout the entirety of the bearing. Therefore, Kurimura fails to disclose at least a

second one of the inner ring race, the outer ring race, and the rolling surface comprises a second portion on which there is disposed no formed film, as claimed.

(ii) The Examiner asserts that Kurimura discloses a surface roughness of 0.1 μm or less but greater than 0 μm . Office Action at page 3, 2nd paragraph, lines 10-11. Instead, however, Kurimura discloses a surface roughness of 0.1 μm or more. Kurimura at col. 2, lines 32-40. Although the claimed range and that in Kurimura share a common end point, Kurimura does not disclose any specific example falling within the claimed range. After all, the end points of a disclosed range are not specific examples. *Atofina v. Great Lakes Chem. Corp*, 441 F.3d 991, 999, 78 USPQ2d 1417, 1423 (Fed. Cir. 2006) (disclosure of a range is not disclosure of the particular endpoints.)

Furthermore, Kurimura makes rough the surface and realize metal-metal contact between the inner/outer race and the rolling element so as to achieve electric connection therebetween. On the other hand, the claimed invention desires to make to the surfaces smooth so that the manganese phosphate-smooth-metal or manganese phosphate-manganese phosphate contact enhances the lifetime of the bearing. Thus, Kurimura fails to disclose the specified range with sufficient specificity, and one of ordinary skill in the art would not have readily envisaged the claimed range from the disclosure in Kurimura. See MPEP § 2131.03.

(iii) The Examiner mistakenly asserts that Kurimura discloses a “rolling bearing capable of use for a roll neck”. Office Action at page 3, 2nd paragraph, lines 1-2. In direct contrast to that asserted by the Examiner, Kurimura specifically discloses that his rolling bearings relate to “applications [that] involve mild load conditions and relatively lower revolutions, [so that] adverse effects resulting from the metal contact can be avoided.” Kurimura at col. 3, lines 6-9.

More specifically, Kurimura relates to a rolling bearing which is suitable to support a photoconductor drum incorporated in an information equipment for electro photo graphic processing such as copiers and printers. In such a bearing, the bearing tends to be charged, and if the bearing is left charged, it may cause image disorders. Thus, the bearing is required to have excellent current carrying capability. In order to achieve this purpose, a surface of at least one of the inner ring and outer ring is made rough so that the surface contacts with the rolling element to thereby achieve electric connection therebetween.

On the contrary, the claimed invention relates to a bearing for a roll neck. As described in detail in the specification, the bearing for roll neck is used under severe condition such as high temperature, high load, fluctuating load, intrusion of coolant or scale. Kurimura's metal to metal contact would be very detrimental to the bearing life in such an environment.

Generally, a bearing used in an information equipment does not bear high load, nor is it used high temperature, as specifically noted by Kurimura. Again, see col. 3, lines 6-9. Therefore, the condition in the information equipment is far from the severe condition of the roll neck. Therefore, it is improper to cite Kurimura in considering patentability of the presently claimed invention.

(2) Second, one of ordinary skill in the art would not have combined Kurimura and JP '061 because the Examiner's proposed combination would destroy the operability of Kurimura. Yet if a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.¹ Consequently, without suggestion or motivation to combine, *prima facie* obviousness is not established.

More specifically, Kurimura desires metal to metal contact in order to establish an electrical connection between the elements of the bearing. Kurimura at col. 2, lines 7-31. In direct contradistinction thereto, JP '061 sets out to prevent the metal to metal contact that is required by Kurimura. See JP '061 at paragraphs [0007, lines 7-12], [0009], and [0022-0024].² Accordingly, these two references are directed to opposite purposes so that one of ordinary skill in the art would not have combined them.

More specifically, in paragraph [0010], JP '061 describes that to achieve the purpose of that patent these three measures are applied simultaneously, (a) forming fine grooves on a constant velocity joint component; (b) performing manganese phosphate treatment on the constant velocity joint component and (c) using the specific lubrication additive agent.

¹ *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

² For the Examiner's convenience, and better understanding of JP '061, sent herewith is an English translation of JP '061.

Since the manganese phosphate is formed in fine recess, although the manganese phosphate film on the contacting surface is disappeared, the manganese phosphate in the fine recess retains the lubricant well. On the other hand, for lubricating the manganese phosphate disappeared contacting surface, specific lubrication additive agent is required.

Therefore, if the skilled person combines JP '061 with Kurimura, the skilled person should form the fine grooves. As for this fine groove, JP '061 described that it is desirable that an average diameter of the recess is $\Phi 30\text{-}80\mu\text{m}$, and a depth is $10\text{-}30\mu\text{m}$. This description is greater than the claimed surface roughness of being $0.1\mu\text{m}$ or less. Moreover, such formation of grooves reduces the areas available for the metal-to-metal contact necessary in Kurimura. Accordingly, because these references are at cross purposes to one another, one of ordinary skill in the art would not have combined them in the manner suggested by the Examiner.

In light of the above, Applicants respectfully request that the Examiner withdraw this rejection.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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